CLAIMS

1. A method for manufacturing a liquid crystal element, in which liquid crystal is sandwiched by two substrates above and below it in a space enclosed by a wall, comprising:

a low-viscosity resin application step of applying a resin that has a viscosity of not more than 20 Pa · s at a predetermined temperature of at least 40°C and that is cured by electromagnetic waves, such as UV light, in order to seal an injection port, after injecting the liquid crystal into the space;

a foreign matter elimination step of providing the applied resin with a viscosity of not more than 20 Pa · s, and accordingly eliminating chemically foreign matter, such as water, air or dust, included therein; and

a low-viscosity UV light curing resin sealing step of curing the resin by irradiating electromagnetic waves, such as UV light, after or together with the foreign matter elimination step.

2. The method for manufacturing a liquid crystal element according to claim 1, wherein the foreign matter elimination step includes a vibration sub-step of applying a predetermined vibration to the sealing resin.

3. The method for manufacturing a liquid crystal element according to claim 2, wherein the vibration step is an ultrasonic/megasonic irradiation vibration sub-step using

ultrasonic or megasonic waves for the vibration applied to the sealing resin.

4. The method for manufacturing a liquid crystal element according to claim 1, wherein the foreign matter elimination step comprises:

a bubble elimination sub-step of contacting and wiping the resin of the injection port portion with a solid to eliminate portions into which bubbles are mixed, which is carried out during or after the low-viscosity resin application step; and

a reapplication sub-step of reapplying resin.

5. The method for manufacturing a liquid crystal element according to claim 1, wherein the foreign matter elimination step comprises a low-pressure step of exposing the applied sealing resin to a pressure that is at least lower than atmospheric pressure, which is carried out during or after the low-viscosity resin application step.

6. The method for manufacturing a liquid crystal element according to claim 1, wherein the foreign matter elimination step comprises an acceleration step of subjecting the resin to an acceleration toward an opposite liquid crystal side, which is carried out after the low-viscosity resin application step.

7. The method for manufacturing a liquid crystal element according to any of claims 1 to 6, wherein the foreign matter

elimination step includes an infrared light irradiation sub-step of irradiating infrared light in order to lower the viscosity of the applied sealing resin by heating it.

8. A liquid crystal element, in which liquid crystal is held by two substrates above and below it in a space enclosed by a wall, comprising:

wherein, in a portion that seals the space after filling liquid crystal into it, a resin is used comprised that has a viscosity of not more than 20 Pa · s at a predetermined temperature of at least 40°C when it is uncured and that can be cured by electromagnetic waves; and

wherein the cured resin dues not include optically foreign matter, such as water, air or dust.

9. The liquid crystal element according to claim 8, wherein the resin curable by electromagnetic waves is a UV-light curing resin.

10. The liquid crystal element according to claim 8, wherein the resin curable by electromagnetic waves is an anaerobic resin.

11. The liquid crystal element according to any of claims 8 to 10, wherein the resin curable by electromagnetic waves is a resin that softens to 20 Pa · s or less at a temperature of 50°C or more.

12. A liquid crystal element, in which liquid crystal is held by two substrates above and below it in a space enclosed by a wall,

wherein an anaerobic resin is used for a portion that seals the space after filling liquid crystal into it.

13. A liquid crystal element, wherein a pixel electrode is formed on one substrate, a common electrode is formed on another substrate, and a molecule alignment of a liquid crystal layer that is sandwiched by orientation films on the inner side of the two substrates is changed by applying a voltage between the two electrodes,

comprising a neutralization electrode for neutralizing a charge of ions in the liquid crystal layer, provided on one or both of the substrates.

14. A liquid crystal element, wherein a pixel electrode and a common electrode are formed on one of two substrates, and a molecule alignment of a liquid crystal layer that is sandwiched by orientation films on the inner side of the two substrates is changed by applying a voltage between the two electrodes,

comprising a neutralization electrode for neutralizing a charge of ions in the liquid crystal layer, provided on one or both of the substrates.

15. A liquid crystal element, wherein a pixel electrode and a common electrode are formed on one substrate, an opposing electrode is formed on another substrate, and a molecule alignment of a liquid crystal layer that is sandwiched by orientation films on the inner side of the two substrates is changed by applying a

predetermined voltage between the three electrodes,

comprising a neutralization electrode for neutralizing a charge of ions in the liquid crystal layer, provided on one or both of the substrates.

16. The liquid crystal element according to any of claims 13 to 15, wherein the neutralization electrode is a conductive light-blocking neutralization electrode, which is made of a conductive material and also serves as a light-blocking film.

17. The liquid crystal element according to any of claims 13 to 15, wherein the neutralization electrode contacts the liquid crystal layer directly, via the orientation film(s), via a thin film not thicker than 1000 ·, or via a film that is transmissive to ions.

18. The liquid crystal element according to claim 16, wherein the neutralization electrode contacts the liquid crystal layer directly, via the orientation film(s), via a thin film not thicker than 1000 ·, or via a film that is transmissive to ions.

19. An in-plane electric field mode liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, and a liquid crystal layer sandwiched via orientation films provided on the inner sides of the two substrates;

the liquid crystal element comprising, on a substrate side on which the pixel electrode, etc., are not provided, a light-blocking

film of a structure with protrusions/recesses in a surface on the liquid crystal layer side.

20. An in-plane electric field mode liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, and a liquid crystal layer sandwiched via orientation films provided on the inner sides of the two substrates;

the liquid crystal element comprising, on a substrate side on which the pixel electrode, etc., are provided, a light-blocking film of a structure with protrusions/recesses in a surface on the liquid crystal layer side.

21. An in-plane electric field mode liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, and a liquid crystal layer sandwiched via orientation films provided on the inner sides of the two substrates;

the liquid crystal element comprising, on a substrate side on which the pixel electrode, etc., are not provided, a neutralization electrode of a structure with protrusions/recesses in a surface on the liquid crystal layer side.

22. An in-plane electric field mode liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, and a liquid crystal layer sandwiched via orientation films

provided on the inner sides of the two substrates;

the liquid crystal element comprising, on a substrate side on which the pixel electrode, etc., are provided, a neutralization electrode of a structure with protrusions/recesses in a surface on the liquid crystal layer side.

23. A liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, an opposing substrate in which an opposing electrode is formed in opposition to the pixel electrode, and a liquid crystal layer sandwiched via orientation films provided on the inner sides of the two substrates, wherein an alignment of the liquid crystal molecules is changed by applying a voltage between the pixel electrode, the common electrode and the opposing electrode;

wherein a surface of the opposing electrode has a structure with protrusions/recesses.

24. A liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, an opposing substrate in which an opposing electrode is formed in opposition to the pixel electrode, and a liquid crystal layer sandwiched via orientation films provided on the inner sides of the two substrates, wherein an alignment of the liquid crystal molecules is changed by applying a voltage between the pixel electrode, the common electrode and the opposing electrode;

the liquid crystal element comprising, on an opposing substrate side on which the pixel electrode, etc., are not formed, a light-blocking film of a structure with protrusions/recesses in a surface on the liquid crystal layer side.

25. A liquid crystal element comprising a pair of substrates on at least one of which a pixel electrode, a common electrode, a signal line and a scanning line are formed, an opposing substrate in which an opposing electrode is formed in opposition to the pixel electrode, and a liquid crystal layer sandwiched via orientation films provided on the inner sides of the two substrates, wherein an alignment of the liquid crystal molecules is changed by applying a voltage between the pixel electrode, the common electrode and the opposing electrode;

the liquid crystal element comprising, on an opposing substrate side on which the pixel electrode, etc., are formed, a light-blocking film of a structure with protrusions/recesses in a surface on the liquid crystal layer side.

26. The in-plane electric field mode liquid crystal element according to any of claims 19, 20, 24 and 25, wherein the light-blocking film is a conductive light-blocking film made of a conductive material.

27. The in-plane electric field mode liquid crystal element according to any of claims 19 to 25, wherein the liquid crystal layer is a low specific resistance liquid crystal layer using a liquid crystal

with a specific resistance that is lower than 10^{13} Ω · cm.

28. The in-plane electric field mode liquid crystal element according to claim 26, wherein the liquid crystal layer is a low specific resistance liquid crystal layer using a liquid crystal with a specific resistance that is lower than 10^{13} Ω · cm.

29. A color filter used in a display device in which a liquid crystal is driven in in-plane electric field mode;

wherein a surface of a light-blocking film portion on a liquid crystal layer side has a structure with protrusions/recessions.

30. The liquid crystal element according to claim 19, 20, 24 or 25, wherein a difference between the recessions and the protrusions in the protrusion/recession structure of the light-blocking film is at least 0.1 μm.

31. The liquid crystal element according to claim 19, 20, 24 or 25, wherein a difference between the recessions and the protrusions in the protrusion/recession structure of the light-blocking film is at least 0.3 μm.

32. The liquid crystal element according to claim 26, wherein a difference between the recessions and the protrusions in the protrusion/recession structure of the light-blocking film is at least 0.3 μm.

33. The liquid crystal element according to claim 27, wherein a difference between the recessions and the protrusions in the protrusion/recession structure of the light-blocking film is at least 0.3 μm.

34. The liquid crystal element according to claim 21 or 22, wherein a difference between the recessions and the protrusions in the protrusion/recession structure of the neutralization electrode is at least 0.1 μm.

35. The liquid crystal element according to claim 27, wherein a difference between the recessions and the protrusions in the protrusion/recession structure of the light-blocking film is at least 0.3 μm.

36. The liquid crystal element according to any of claims 19, 20, 24 and 25, wherein the light-blocking film contacts the liquid crystal directly or via the orientation films.

37. The liquid crystal element according to claim 23, wherein the light-blocking film contacts the liquid crystal directly or via the orientation films.

38. The liquid crystal element according to claim 24, wherein the light-blocking film contacts the liquid crystal directly or via the orientation films.

39. The liquid crystal element according to claim 21 or 22, wherein the neutralization electrode contacts the liquid crystal directly or via the orientation films.

40. The liquid crystal element according to claim 23, wherein the neutralization electrode contacts the liquid crystal directly or via the orientation films.

41. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, at least on one of the substrates, source signal lines and gate signal lines arranged in a matrix, switching elements arranged at intersections between the source signal lines and the gate signal lines, pixel electrodes connected to the switching elements, common electrodes facing the pixel electrodes, an insulating layer for insulation, etc., of these parts; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the liquid crystal element comprises electrodes for holding a voltage of a predetermined relation to gates.

42. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, at least on one of the substrates, source signal lines and gate signal lines arranged in a matrix, switching elements arranged at intersections between the

source signal lines and the gate signal lines, pixel electrodes connected to the switching elements, common electrodes facing the pixel electrodes, an insulating layer for insulation, etc., of these parts; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the liquid crystal element comprises electrodes for holding a voltage of a predetermined relation to the pixel electrodes.

43. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, at least on one of the substrates, source signal lines and gate signal lines arranged in a matrix, switching elements arranged at intersections between the source signal lines and the gate signal lines, pixel electrodes connected to the switching elements, common electrodes facing the pixel electrodes, an insulating layer for insulation etc. of these parts; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the liquid crystal element comprises electrodes for holding a voltage of a predetermined relation to opposing electrodes, which contact the liquid crystal layer directly, via the orientation films, via a thin film not thicker than 1000 Å, or via a film that is transmissive to ions.

44. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, at least on one of the substrates, source signal lines and gate signal lines arranged in a matrix, switching elements arranged at intersections between the source signal lines and the gate signal lines, pixel electrodes connected to the switching elements, common electrodes facing the pixel electrodes, an insulating layer for insulation etc. of these parts; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the liquid crystal element comprises electrodes for holding a voltage of a predetermined relation to at least one of scanning signal lines or gate signal lines.

45. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, at least on one of the substrates, source and gate signal lines as conductive layers, as well as pixel electrodes and common electrodes for generating an in-plane electric field, and further including an insulating film ensuring insulation or the like among these conductive layers; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the liquid crystal element comprises a region made into a thin film, in which the total thickness of a film forming a third layer made of the insulating film and an orientation film

arranged between the conductive layers and the liquid crystal layer is less than 1000 Å.

46. The liquid crystal element according to claim 45, wherein the region made into a thin film is located on at least one of the orientation film and the insulating film.

47. The liquid crystal element according to claim 45, wherein the region made into a thin film is on the orientation film or a protective film, and the orientation film or the protective film is made of a conductive material.

48. The liquid crystal element according to any of claims 45, 46 and 47, wherein the region made into a thin film is located on the pixel electrodes, the common electrodes or the signal lines.

49. The liquid crystal element according to any of claims 45, 46 and 47,

wherein the liquid crystal element includes a conductive light-blocking film; and

the region made into a thin film is located on the conductive light-blocking film.

50. The liquid crystal element according to claim 49, wherein the region made into a thin film is formed on a substrate opposing the substrate on which the pixel electrodes, etc., are formed.

51. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on at least one of the substrates, as conductive layers, signal lines, storage capacity electrodes, and pixel electrodes and common electrodes for generating an in-plane electric field, and an insulating film for insulating, etc., these conductive layers from one another; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein a film forming a third layer made of the insulating film and the orientation films, etc., arranged between the conductive layer and the liquid crystal is, in a predetermined location, only the orientation film of a film thickness of no more than 1000 • , a film transmissive to ions, or has not been formed in the first place.

52. The liquid crystal element according to claim 51, wherein the predetermined location at which the liquid crystal layer and the conductive layer are in direct contact is on the pixel electrodes, the common electrodes, the storage capacity electrodes, or the signal lines.

53. The liquid crystal element according to claim 51, wherein the liquid crystal element comprises a conductive light-blocking film, and the predetermined location at which the liquid crystal layer and the conductive layer are in direct contact is on the conductive light-blocking film.

54. The liquid crystal element according to claim 53, wherein the region the region made into a thin film is formed on a substrate opposing the substrate on which the pixel electrodes, etc., are formed.

55. A liquid crystal element, comprising:

a pair of substrates including, on one of the substrates, pixel electrodes, as well as opposing electrodes and signal lines not on the same layer as the pixel electrodes, and an insulating film for insulating, etc., these from one another; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the insulating film is formed on either the pixel electrodes or the opposing electrodes, and is not formed at all on the other of the two.

56. The liquid crystal element according to claim 55, wherein the insulating film is formed along the direction of rubbing in the liquid crystal element.

57. The liquid crystal element according to any of claims 45 to 47, 51 to 53, 55, and 56, wherein the liquid crystal element is a low specific resistance liquid crystal layer using a liquid crystal with a specific resistance smaller than $10^{13}\ \Omega \cdot cm$.

58. The liquid crystal element according to claim 50, wherein the

liquid crystal element is a low specific resistance liquid crystal layer using a liquid crystal with a specific resistance smaller than 10^{13} Ω · cm.

59. The liquid crystal element according to claim 54, wherein the liquid crystal element is a low specific resistance liquid crystal layer using a liquid crystal with a specific resistance smaller than10^{13} Ω · cm.

60. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on one of the substrates, pixel electrodes, common electrodes, as well as signal lines and scanning lines corresponding to the pixel electrodes and the common electrodes, and an insulating layer;

wherein liquid crystal is sandwiched via orientation films provided on the inner side of the two substrates; and

wherein the other substrate comprises a conductive light-blocking film contacting the liquid crystal layer.

61. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on one of the substrates, pixel electrodes, common electrodes, as well as signal lines and scanning lines corresponding to the pixel electrodes and the common electrodes, and an insulating layer;

wherein liquid crystal is sandwiched via orientation films

provided on the inner side of the two substrates; and

wherein the liquid crystal element comprises, on the other substrate, a light-blocking film extending in the direction of the signal line or in the direction of the scanning line, and in which there are regions where it contacts the liquid crystal layer in a striped shape.

62. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on one of the substrates, pixel electrodes, common electrodes, as well as signal lines and scanning lines corresponding to the pixel electrodes and the common electrodes, and an insulating layer;

wherein liquid crystal is sandwiched via orientation films provided on the inner side of the two substrates; and

wherein the liquid crystal element comprises, on the other substrate, a conductive light-blocking film extending in the direction of the signal line and in the direction of the scanning line, and in which there are regions where it contacts the liquid crystal layer in a lattice shape.

63. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on one of the substrates, pixel electrodes, common electrodes, as well as signal lines and scanning lines corresponding to the pixel electrodes and the common electrodes, and an insulating layer;

wherein liquid crystal is sandwiched via orientation films provided on the inner side of the two substrates; and

wherein the liquid crystal element comprises, on the other substrate, a conductive light-blocking film in contact with the liquid crystal layer via the orientation films.

64. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on one of the substrates, pixel electrodes, common electrodes, as well as signal lines and scanning lines corresponding to the pixel electrodes and the common electrodes, and an insulating layer;

wherein liquid crystal is sandwiched via orientation films provided on the inner side of the two substrates; and

wherein the liquid crystal element comprises, on the other substrate, a conductive light-blocking film extending in the direction of the signal line or in the direction of the scanning line, and in which there are regions where it contacts the liquid crystal layer via the orientation films in a striped shape.

65. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates, in which on one of the substrates is formed pixel electrodes and common electrodes, as well as signal lines and scanning lines corresponding to the pixel electrodes and the common electrodes;

wherein liquid crystal is sandwiched via orientation films

provided on the inner side of the two substrates; and

wherein the in-plane electric field mode liquid crystal element comprises, on the other substrate, a conductive light-blocking film extending in the direction of the signal lines and in the direction of the scanning lines, and regions thereof are in contact with the liquid crystal layer via a thin film layer of 1000 Å or a film transmissive to ions arranged in a grid shape.

66. The in-plane electric field mode liquid crystal element according to any of claims 60 to 65, wherein the conductive portion of the conductive light-blocking film is made of Cr, Ti, or a conductive resin.

67. The in-plane electric field mode liquid crystal element according to any of claims 60 to 65, wherein the conductive light-blocking film is a light-blocking film made of a conductive resin.

68. The in-plane electric field mode liquid crystal element according to claim 66, wherein columns are formed at a predetermined site as spacers for holding a fixed spacing between the substrates of the liquid crystal element.

69. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on at least one of the substrates, pixel electrodes, common electrodes, signal lines,

scanning lines, and an insulating film for insulating, etc., these portions; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein no insulating film is formed on at least a portion of the liquid crystal side of at least one of the pixel electrodes, the common electrodes, and the signal lines, whereby these electrodes or lines are insulating film open electrodes contacting the liquid crystal directly or via the orientation film; and

wherein the liquid crystal element comprises, on the substrate side on which the pixel electrodes and the common electrodes have not been formed, a neutralization electrode for neutralizing ionic charges in the liquid crystal layer by sites where the insulating film to the liquid crystal layer has not been formed at all or the insulating film to the liquid crystal layer has at least partially not been formed.

70. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on at least one of the substrates, pixel electrodes, common electrodes, signal lines, scanning lines, and an insulating film for insulating, etc., these portions; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the pixel electrodes are open pixel electrodes, in which no insulating film has been formed at all, so that at these

portions the pixel electrodes contact the liquid crystal directly or via only an orientation film; and

wherein the liquid crystal element comprises, on the substrate side on which the pixel electrodes, etc., have not been formed, a neutralization electrode for neutralizing ionic charges in the liquid crystal layer by sites where the insulating film to the liquid crystal layer has not been formed at all or the insulating film to the liquid crystal layer has at least partially not been formed.

71. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on at least one of the substrates, pixel electrodes, common electrodes, signal lines, scanning lines, and an insulating film for insulating, etc., these portions; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the common electrodes are open common electrodes, in which no insulating film has been formed at all, so that at these portions the common electrodes contact the liquid crystal directly or via only an orientation film; and

wherein the liquid crystal element comprises, on the substrate side on which the pixel electrodes, etc., have not been formed, a neutralization electrode for neutralizing ionic charges in the liquid crystal layer by sites where the insulating film to the liquid crystal layer has not been formed at all or the insulating film to the liquid crystal layer has at least partially not been formed.

72. An in-plane electric field mode liquid crystal element comprising:

a pair of substrates including, on at least one of the substrates, pixel electrodes, common electrodes, signal lines, scanning lines, and an insulating film for insulating, etc., these portions; and

a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates;

wherein the pixel electrodes and the common electrodes are, respectively, open pixel electrodes and open common electrodes, in which no insulating film to the liquid crystal layer has been formed at all, so that at these portions they contact the liquid crystal directly or via only an orientation film; and

wherein the liquid crystal element comprises, on the substrate side on which the pixel electrodes and common electrodes have not been formed, a neutralization electrode for neutralizing ionic charges in the liquid crystal layer by sites where the insulating film to the liquid crystal layer has not been formed at all or the insulating film to the liquid crystal layer has at least partially not been formed.

73. The liquid crystal element according to any of claims 69 to 72, wherein the liquid crystal layer of the liquid crystal element is a low specific resistance liquid crystal layer using a liquid crystal with a specific resistance of less than $10^{13}\ \Omega \cdot cm$.

74. The liquid crystal element according to any of claims 69 to 72, including a positive potential applying means for applying, to the neutralization electrode, a positive potential with respect to a minimum voltage level of the scanning line.

75. The liquid crystal element according to any of claims 69 to 72, wherein the neutralization electrode is an equipotential neutralization electrode that has been set to the same potential as the common electrode.

76. The liquid crystal element according to any of claims 69 to 72, wherein the neutralization electrode is a light-blocking film combined neutralization electrode that also serves as a light-blocking film.

77. The liquid crystal element according to any of claims 69 to 72, wherein the neutralization electrode is a color filter combined neutralization electrode that also serves as a color filter.

78. The liquid crystal element according to any of claims 69 to 72, wherein the insulating film has not been formed on a top portion of the pixel electrodes, the common electrodes, or the signal electrodes, so that the portion without the insulating film faces the liquid crystal layer via only the orientation film; and

wherein the orientation film is made of a conductive substance.

79. The liquid crystal element according to claim 76, comprising a positive potential applying means for applying, to the neutralization electrode, a positive potential with respect to a minimum voltage level of the scanning line.

80. The liquid crystal element according to claim 77, comprising a positive potential applying means for applying, to the neutralization electrode, a positive potential with respect to a minimum voltage level of the scanning line.

81. The liquid crystal element according to claim 76, wherein the neutralization electrode is an equipotential neutralization electrode that has been set to the same potential as the common electrode.

82. The liquid crystal element according to claim 77, wherein the neutralization electrode is an equipotential neutralization electrode that has been set to the same potential as the common electrode.

83. A method for manufacturing an in-plane electric field mode liquid crystal element having a pair of substrates including, on at least one of the substrates, pixel electrodes for generating an in-plane electric field, common electrodes, and an insulating film for insulating, etc., these electrodes from one another, and a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates; the method for

manufacturing a liquid crystal element, comprising:

an orientation film removal step of removing a predetermined portion of the orientation film once formed on the inner side of the two substrates.

84. A method for manufacturing an in-plane electric field mode liquid crystal element having a pair of substrates including, on at least one of the substrates, pixel electrodes for generating an in-plane electric field, common electrodes, and an insulating film for insulating, etc., these electrodes from one another, and a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates; the method for manufacturing a liquid crystal element, comprising:

an orientation film removal step of removal, by etching, of a predetermined portion of the orientation film once formed on the inner side of the two substrates; and

an orientation step of performing an orientation process to the remaining orientation film.

85. A method for manufacturing an in-plane electric field mode liquid crystal element having a pair of substrates including, on at least one of the substrates, pixel electrodes for generating an in-plane electric field, common electrodes, and an insulating film for insulating, etc., these electrodes from one another, and a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates; the method for manufacturing a liquid crystal element, comprising:

a stripping step of stripping, by rubbing, a predetermined portion of the orientation film on the electrodes or the lines once formed on the inner side of the two substrates.

86. The method for manufacturing a liquid crystal element according to claim 85, wherein the stripping step is a push rubbing stripping step wherein the pushing amount during rubbing is at least 0.5 mm.

87. An in-plane electric field mode liquid crystal element including a pair of substrates on which are formed, on at least one of the substrates, pixel electrodes, common electrodes, signal lines and scanning lines corresponding to these electrodes, and an insulating film; and a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates, comprising:

a conductive light-blocking film formed on the other substrate; and

an electrical connection portion for electrically connecting the light-blocking film to the common electrodes, the pixel electrodes, the scanning lines, or the signal lines.

88. A method for manufacturing an in-plane electric field mode liquid crystal element including a pair of substrates on which are formed, on at least one of the substrates, pixel electrodes, common electrodes, signal lines and scanning lines corresponding to these electrodes, and an insulating film for insulating;

and a liquid crystal layer sandwiched via orientation films provided in principle on the inner side of the two substrates, the method for manufacturing an in-plane electric field mode liquid crystal element comprising:

a light-blocking film formation step of forming a light-blocking film made of a conductive substance at a predetermined location on the other substrate;

an over-coating layer material selection step of selecting a photosensitive material as the material of an over-coating layer of the light-blocking film;

an over-coating layer formation step of forming the over-coating layer with the selected photosensitive material; and

an over-coating layer portion stripped portion formation step using photolithography of forming, by photolithography, on the over-coating material layer on the conductive light-blocking film a region in which there is no over-coating layer on the light-blocking film.

89. The method for manufacturing an in-plane electric field mode liquid crystal element according to claim 88, comprising:

an equipotential conductive portion formation step of forming, onto the formed conductive light-blocking film, an electrical connection portion for applying the same potential as that of the common electrode.

90. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of forming, at a predetermined location on a first substrate, an opposing electrode and a scanning line also serving as a gate of a transistor made of a metal layer;

a first insulating film formation step of forming a first insulating film on the scanning line and the opposing electrode that have been formed;

a semiconductor layer formation step of forming a semiconductor layer at a predetermined location;

a second conductive layer formation step of forming a signal line and a pixel electrode at predetermined locations; and

a second insulating film formation step of forming a second insulating film only on a switching element made of the semiconductor layer formed at the predetermined location.

91. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of forming, at a predetermined location on a first substrate, a scanning line and an opposing electrode also serving as a gate of a transistor made of a metal layer;

a first insulating film formation step of forming a first insulating film on the scanning line and the opposing electrode that are formed;

a semiconductor formation step of forming a semiconductor layer at a predetermined location;

a second conductive layer formation step of forming a signal

line and a pixel electrode at predetermined locations; and

a second insulating film formation step of forming a second insulating film only on the signal line and on a switching element made of the semiconductor layer formed at the predetermined location.

92. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of forming, at a predetermined location on a first substrate, a scanning line and an opposing electrode also serving as a gate of a transistor made of a metal layer;

a first insulating film formation step of forming a first insulating film on the scanning line and the opposing electrode that are formed;

a semiconductor formation step of forming a semiconductor layer at a predetermined location;

a second conductive layer formation step of forming a signal line and a pixel electrode at predetermined locations; and

a second insulating film formation step of forming a second insulating film only on the scanning line and on a switching element made of the semiconductor layer formed at the predetermined location.

93. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of forming, at a

predetermined location on a first substrate, a scanning line and an opposing electrode also serving as a gate of a transistor made of a metal layer;

a first insulating film formation step of forming a first insulating film on the scanning line and the opposing electrode that are formed;

a semiconductor formation step of forming a semiconductor layer at a predetermined location;

a second conductive layer formation step of forming a signal line and a pixel electrode at predetermined locations; and

a second insulating film formation step of forming a second insulating film only on the signal line, the scanning line, and a switching element made of the semiconductor layer formed at the predetermined location.

94. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of selectively forming a signal line and a pixel electrode on a first substrate;

a semiconductor layer formation step of forming a semiconductor layer at a predetermined location;

a first insulating film formation step of forming a first insulating film on the signal line and the pixel electrode that are formed;

a second conductive layer formation step of forming, at a predetermined location on the formed first insulating film, an opposing electrode and a scanning line also serving as a gate of a

transistor; and

a second insulating film formation step of forming a second insulating film only on a switching element made of the semiconductor layer formed at the predetermined location.

95. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of selectively forming a signal line and a pixel electrode on a first substrate;

a semiconductor layer formation step of forming a semiconductor layer at a predetermined location;

a first insulating film formation step of forming a first insulating film on the signal line and the pixel electrode that are formed;

a second conductive layer formation step of selectively forming an opposing electrode and a scanning line also serving as a gate of a transistor on the formed first insulating film; and

a second insulating film formation step of forming a second insulating film only on the signal line and a switching element made of the semiconductor layer formed at the predetermined location.

96. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of selectively forming a signal line and a pixel electrode on a first substrate;

a semiconductor layer formation step of forming a

semiconductor layer at a predetermined location;

a first insulating film formation step of forming a first insulating film on the signal line and the pixel electrode that are formed;

a second conductive layer formation step of forming, at a predetermined location, an opposing electrode and a scanning line also serving as a gate of a transistor on the formed first insulating film; and

a second insulating film formation step of forming a second insulating film only on the scanning line and a switching element made of the semiconductor layer formed at the predetermined location.

97. A method for manufacturing an in-plane electric field mode liquid crystal element, comprising:

a first conductive layer formation step of selectively forming a signal line and a pixel electrode on a first substrate;

a semiconductor layer formation step of forming a semiconductor layer at a predetermined location;

a first insulating film formation step of forming a first insulating film on the signal line and the pixel electrode that are formed;

a second conductive layer formation step of forming, at a predetermined location on the formed first insulating film, a scanning line and an opposing electrode also serving as a gate of a transistor; and

a second insulating film formation step of forming a second

insulating film only on the signal line, the scanning line, and a switching element made of the semiconductor layer formed at the predetermined location.

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